

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A process for rectificatively separating fluids comprising (meth)acrylic monomers in a rectification column by directly cooling the vapor comprising:

forming a top condensate including (meth)acrylic monomers by allowing the (meth)acrylic monomers to rise to the top of the rectification column;

separating a condensation space at the top of the column from the region of the rectification column containing a separating internals only by at least one chimney tray which has at least one chimney, from which the top condensate formed is removed from the rectification column,

effecting the direct cooling of the vapor in the condensation space in at least two spray zones, which are spatially successive and are flown through by vapor, by spraying in each of the at least two spray zones supercooled top condensate including added polymerization inhibitor through spray nozzles; and

lowering a temperature of the sprayed supercooled top condensate from spray zone to spray zone in the flow direction of the vapor.

Claim 2 (Previously Presented): A process as claimed in claim 1, wherein at least one of the at least two spray zones is supplied via annularly mounted spray nozzles.

Claim 3 (Previously Presented): A process as claimed in claim 1, wherein the spray nozzles are full cone spray nozzles whose opening angle is from 60° to 180°.

Claim 4 (Original): A process as claimed in claim 3, wherein the opening angle is from 90° to 120°.

Claim 5 (Previously Presented): A process as claimed in claim 3, wherein the spray cones overlap one and the same spray zone.

Claim 6 (Previously Presented): A process as claimed in claim 3, wherein the spray cones of spatially successive spray zones do not overlap.

Claim 7 (Previously Presented): A process as claimed in claim 3, wherein the spray cones of spatially successive spray zones just touch.

Claim 8 (Previously Presented): A process as claimed in claim 1, wherein the rectification column is flowed through by a molecular oxygen-containing gas.

Claim 9 (Previously Presented): A process as claimed in claim 1, wherein the condensation space has an offgas outlet.

Claim 10 (Original): A process as claimed in claim 9, wherein the condensation space is an empty pipe which narrows conically toward the offgas outlet.

Claim 11 (Previously Presented): A process as claimed in claim 1, wherein the at least one chimney tray, from which the top condensate formed is removed from the rectification column, has a slope on all sides toward the inner wall of the condensation space.

Claim 12 (Previously Presented): A process as claimed in claim 1, wherein the at least one chimney tray, from which the top condensate formed is removed from the rectification column, and its at least one chimney, are configured with thermal isolation against the region of the rectification column containing the separating internals.

Claim 13 (Previously Presented): A process as claimed in claim 1, wherein the at least one chimney tray, from which the top condensate formed is removed from the rectification column, and its at least one chimney, have a double-walled configuration consisting of a higher and a lower wall.

Claim 14 (Previously Presented): A process as claimed in claim 13, wherein trace heating is mounted on the upper surface of the lower of the two walls.

Claim 15 (Currently Amended): A rectification column, comprising:
a condensation space at a top of the column;
at least one chimney tray;
~~a spray condenser; and~~
a separation section ~~region~~ which contains separating internals and which section is separated from the condensation space only by ~~is completed at the top by~~ the at least one chimney tray which has at least one chimney, wherein the condensation space is equipped with and is continued into the spray condenser having at least two spatially successive spray zones, each of which has including spray nozzles, ~~wherein the at least two spray zones are spatially successive and are means which when flown through by vapor, have the function to cool the vapor by~~ as means for spraying supercooled top condensate taken from the chimney tray and supplemented by including added polymerization inhibitor into the condensation

space with a condensate ~~through the spray nozzles, and the temperature of the sprayed~~
~~supercooled top condensate becoming lower from spray zone to spray zone in the flow~~
~~direction of the vapor.~~